Appendix B
Meteorological Data

This section contains meteorological data derived from various regulatory and non-regulatory sites. The data provides a comparative analysis of winds speed, wind direction, wind gusts and concentration data. Please note that meteorological instruments measure at different heights, and at different time intervals. By taking, the actual time of measurement and assuring that all data represented is in Pacific Standard Time (PST) there is uniformity of the data. In addition, not all stations measure at the exact same time, i.e. measurements at 053 and 056 therefore, comparisons are measurements within a 60-minute period. While there may be some overlapping and slight differences the comparative analysis provides the reader with a better understanding of the regional effect of the Exceptional Event.

FIGURE B-1
POTENTIAL METEOROLOGICAL SITES USED IN EXCEPTIONAL EVENT DOCUMENTS

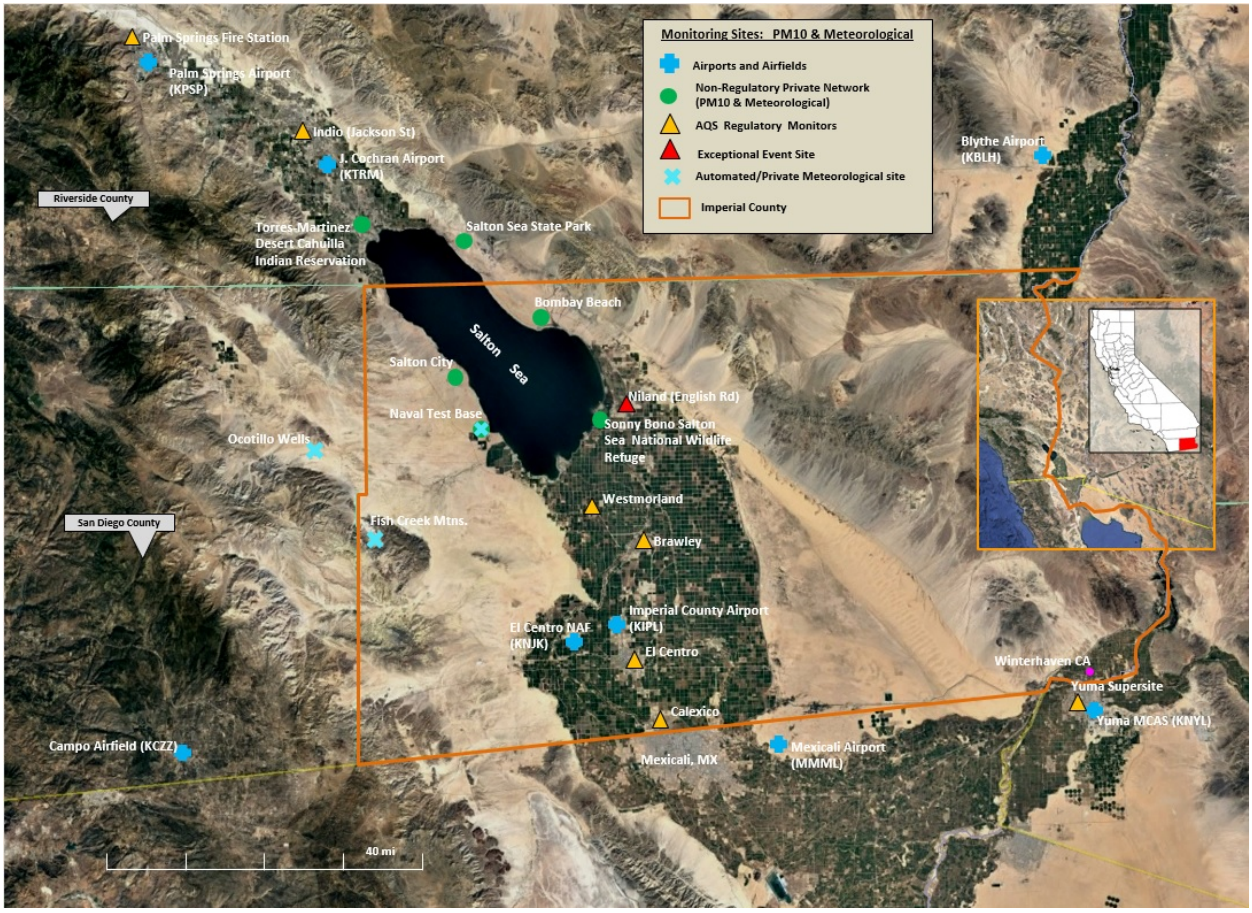


Fig. B-1: Depicts all the potential sites from which the ICAPCD may access meteorological data. Base map and larger locator map from Google Earth.

IMPERIAL COUNTY SITES
B-2 THROUGH B-9

FIGURE B-2
IMPERIAL COUNTY AIRPORT (KIPL)
WIND SPEED, GUSTS & DIRECTION

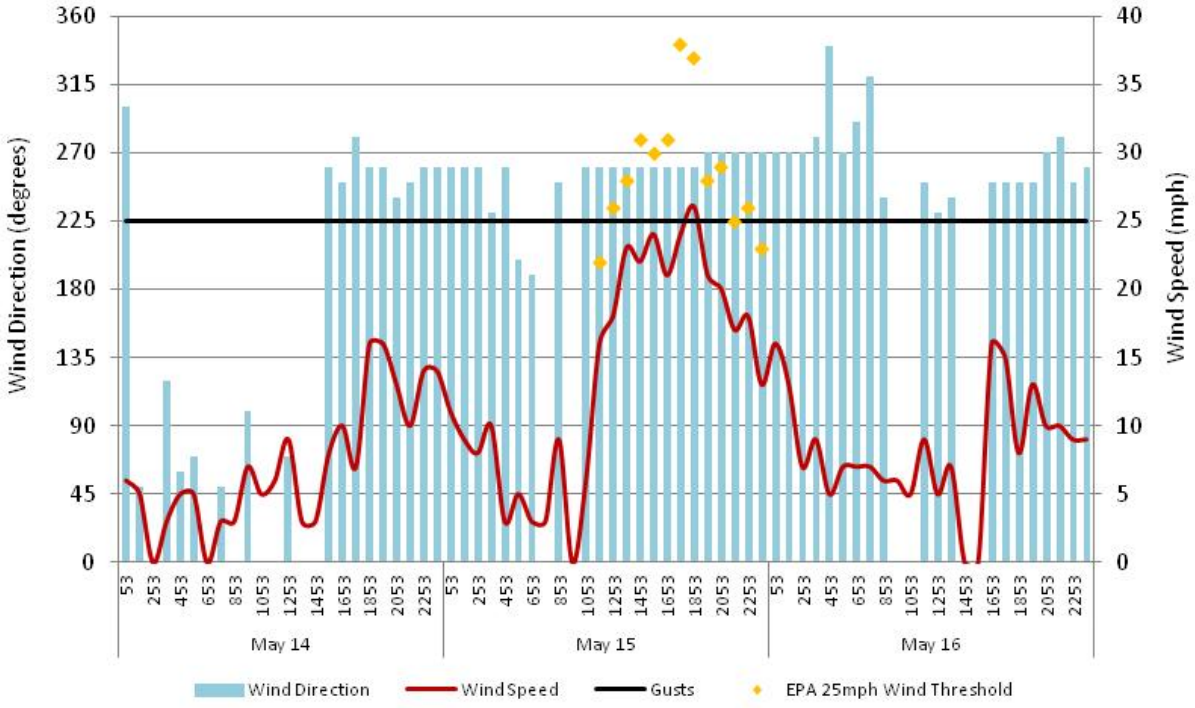
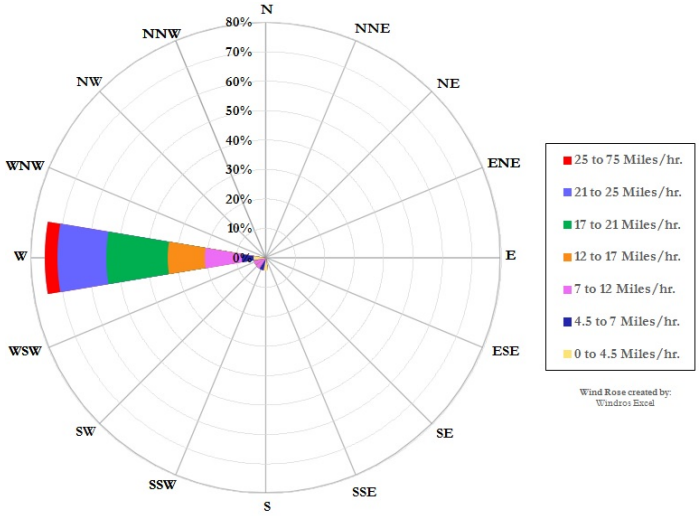


FIGURE B-3
KIPL WIND ROSE – MAY 15, 2016



Figs. B-2 & B-3: Imperial Airport (KIPL) meteorological data shows winds and gusts exceeded the 25 mph wind threshold on March 6. Data from the NCEI's QCLCD system.

FIGURE B-4
EL CENTRO NAF (KNJK)
WIND SPEED & DIRECTION

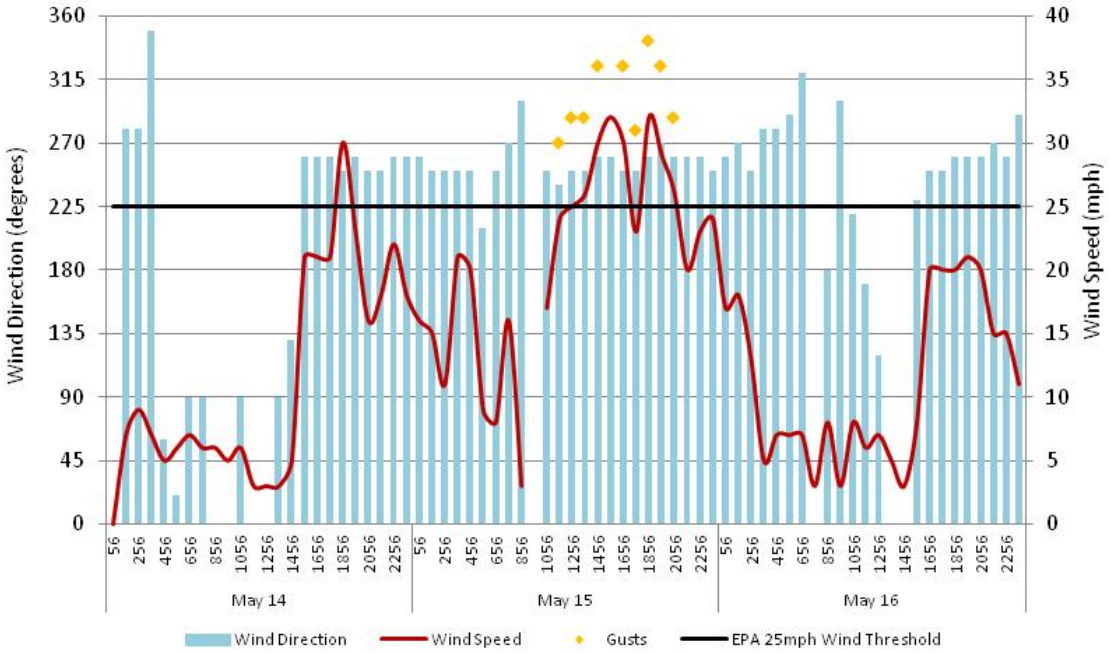
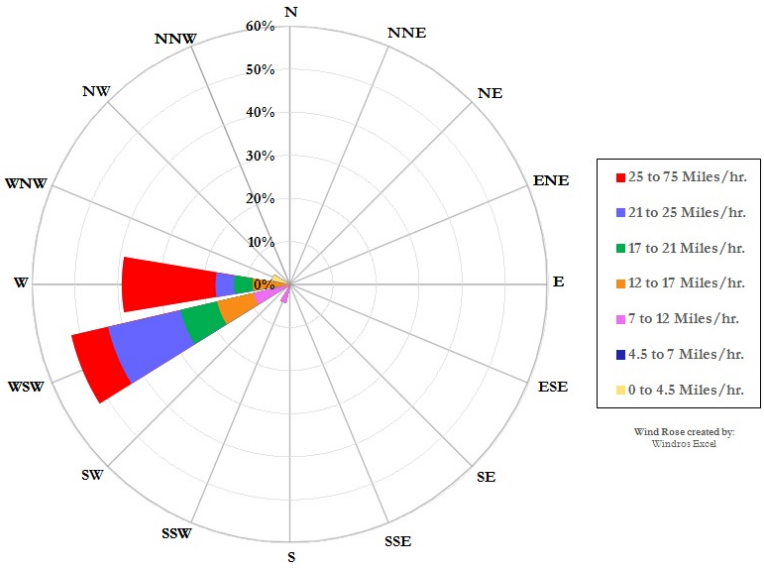


FIGURE B-5
KNJK WIND ROSE – MAY 15, 2016



Figs. B-6-4 & B-5: El Centro NAF meteorological data shows winds were strong early in the morning, and continued to increase along with gusts, later into the day. Data from the NCEI's QCLCD system.

FIGURE B-6
CALEXICO
WIND SPEED & DIRECTION

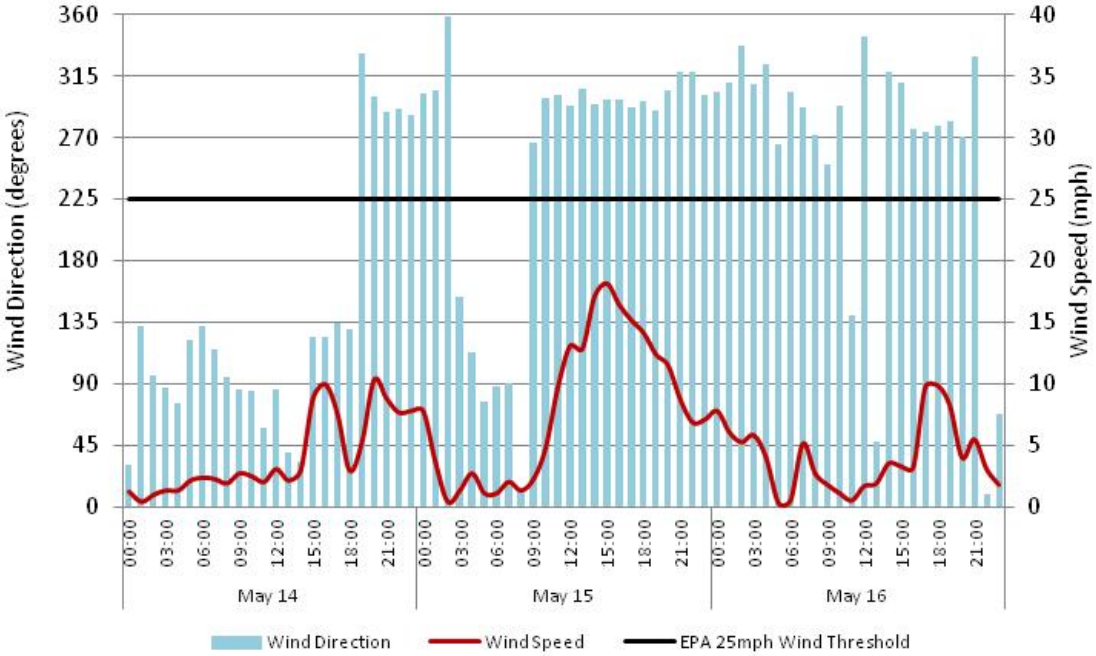


FIGURE B-7
CALEXICO WIND ROSE – MAY 15, 2016

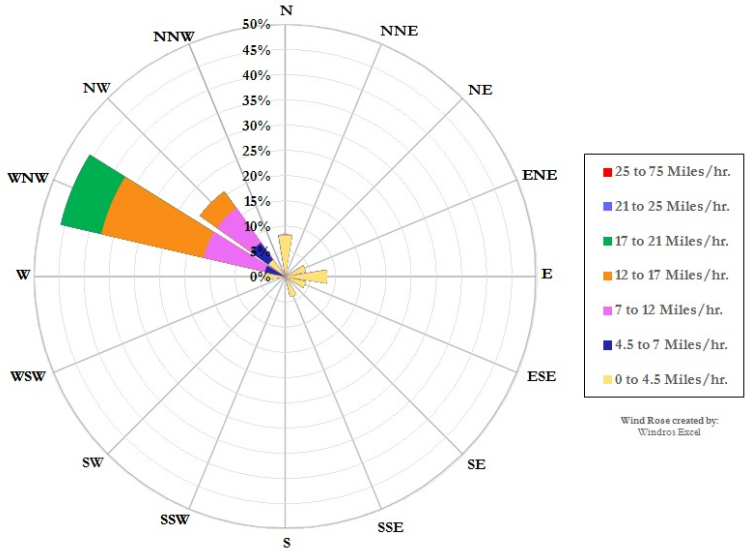


Fig. B-6 & B-7: Wind at Calexico did not surpass the 25 mph wind threshold. Wind data from the EPA's AQS data bank.

FIGURE B-8
EL CENTRO
WIND SPEED & DIRECTION

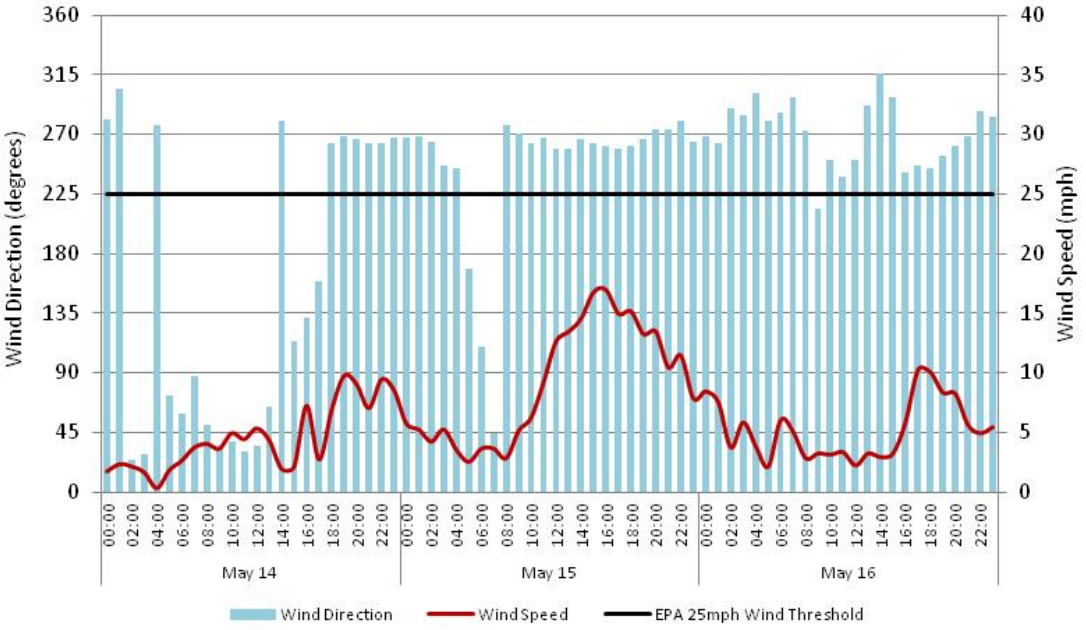


FIGURE B-9
EL CENTRO (9th St) WIND ROSE – MAY 15, 2016

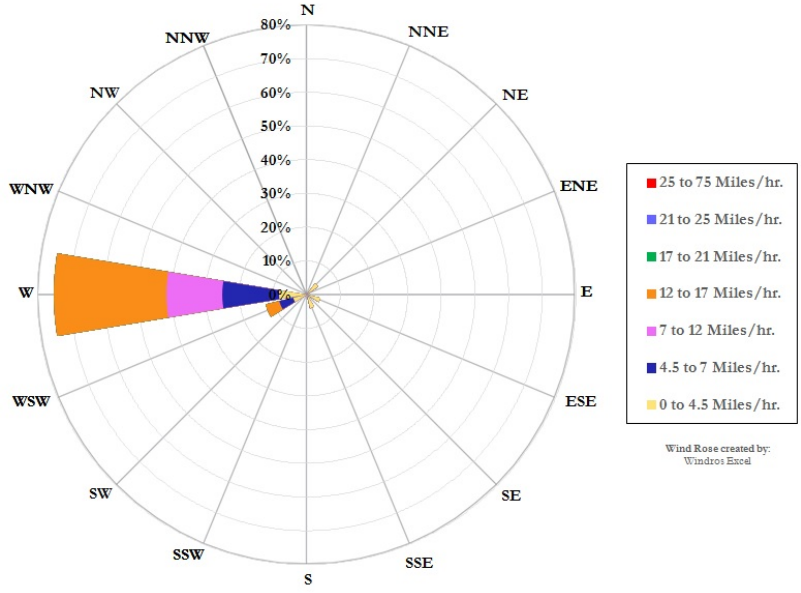


Fig. B-8 & B-9: Wind at El Centro (9th St) did not surpass the 25 mph wind threshold. Wind data from the EPA's AQS data bank.

FIGURE B-10
NILAND (ENGLISH RD)
WIND SPEED & DIRECTION

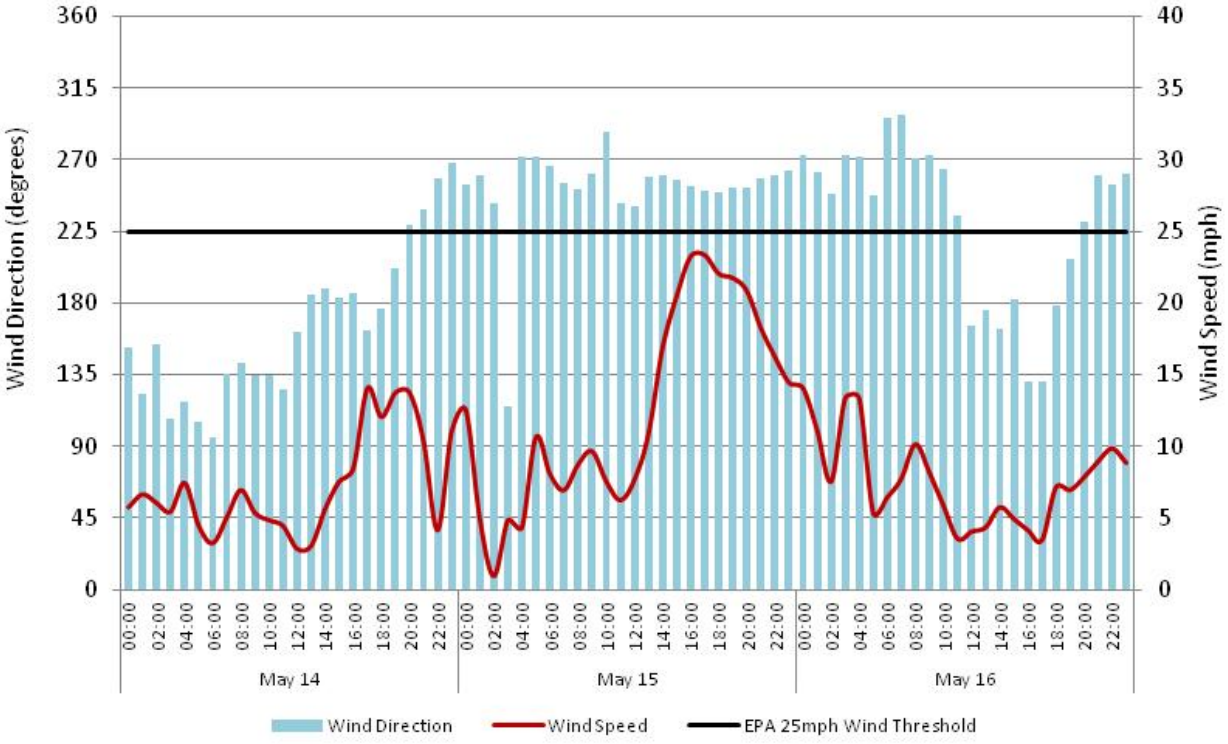


FIGURE B-11
NILAND (ENGLISH RD) WIND ROSE – MAY 15, 2016

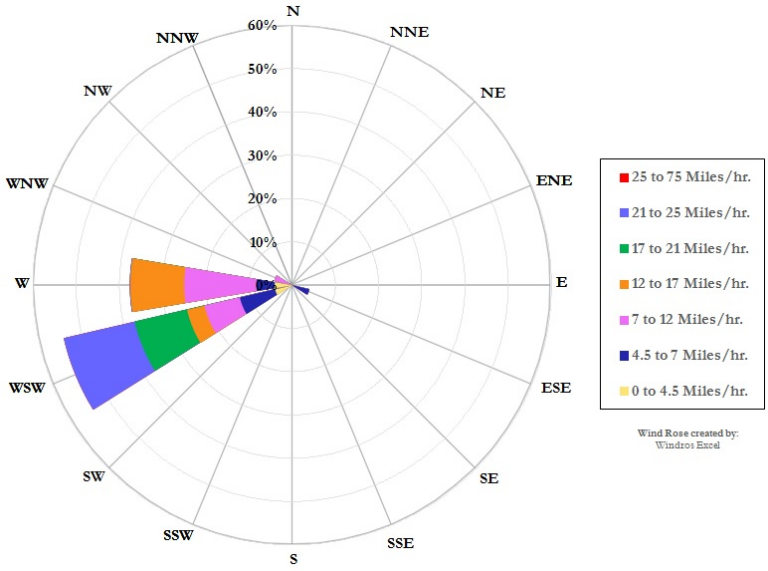


Fig. B-10 & B-11: Wind at Niland (English Rd) was just under 25 mph but was affected by upstream winds and gusts. Wind data from the EPA's AQS data bank.

FIGURE B-12
WESTMORLAND
WIND SPEED & DIRECTION

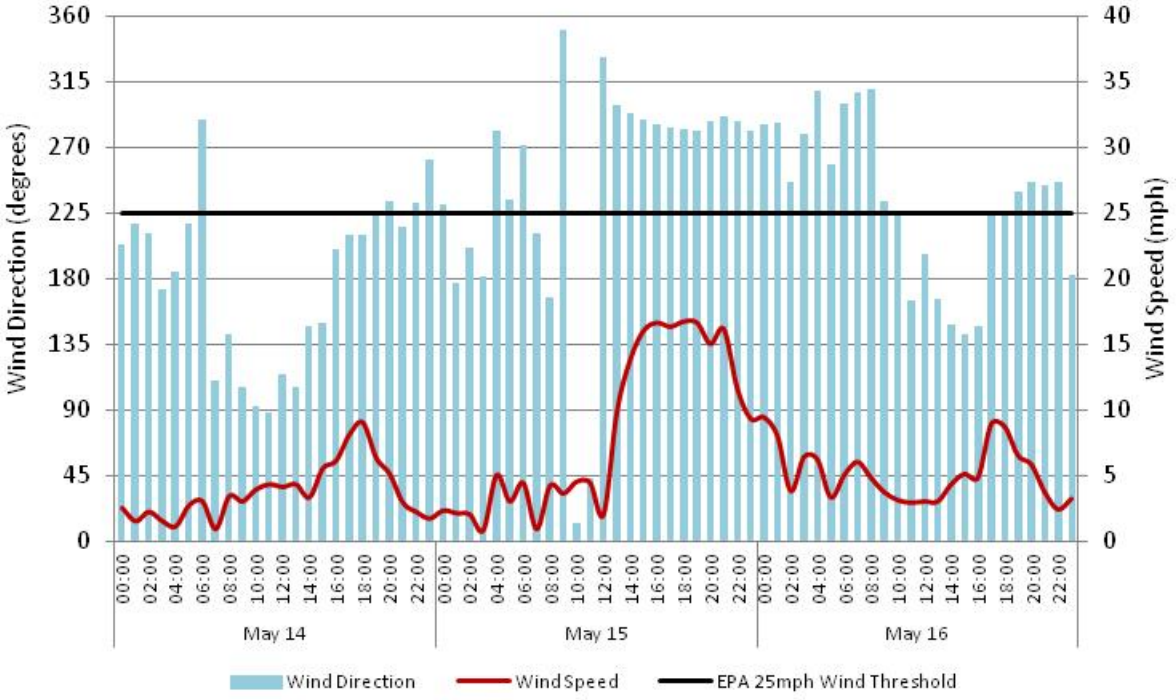


FIGURE B-13
WESTMORLAND WIND ROSE – MAY 15, 2016

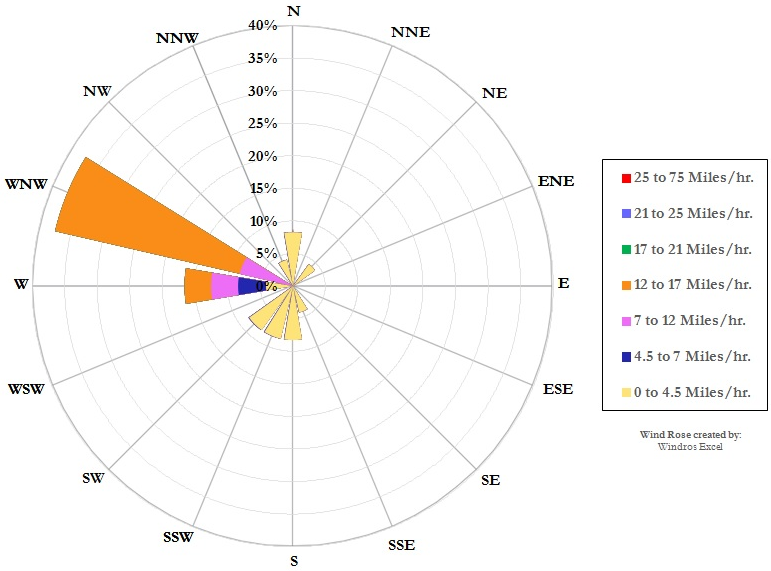


Fig. B-12 & B-13: Wind at Westmorland did not surpass the 25 mph wind threshold. Wind data from the EPA's AQS data bank.

EASTERN RIVERSIDE COUNTY SITES

FIGURE B-14
BLYTHE AIRPORT (KBLH)
WIND SPEED, GUSTS & DIRECTION

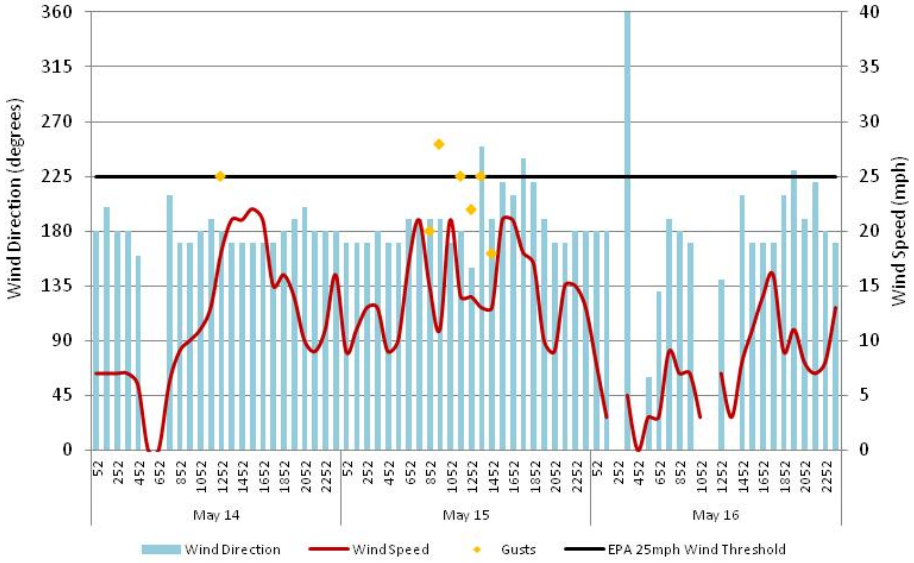


Fig. B-16: Wind and gusts at KBLH surpassed the 25 mph wind threshold. Wind data from the NCEI's QCLCD data bank.

FIGURE B-15
DESERT RESORTS (aka J.COCHRAN-THERMAL) AIRPORT (KTRM)
WIND SPEED, GUSTS & DIRECTION

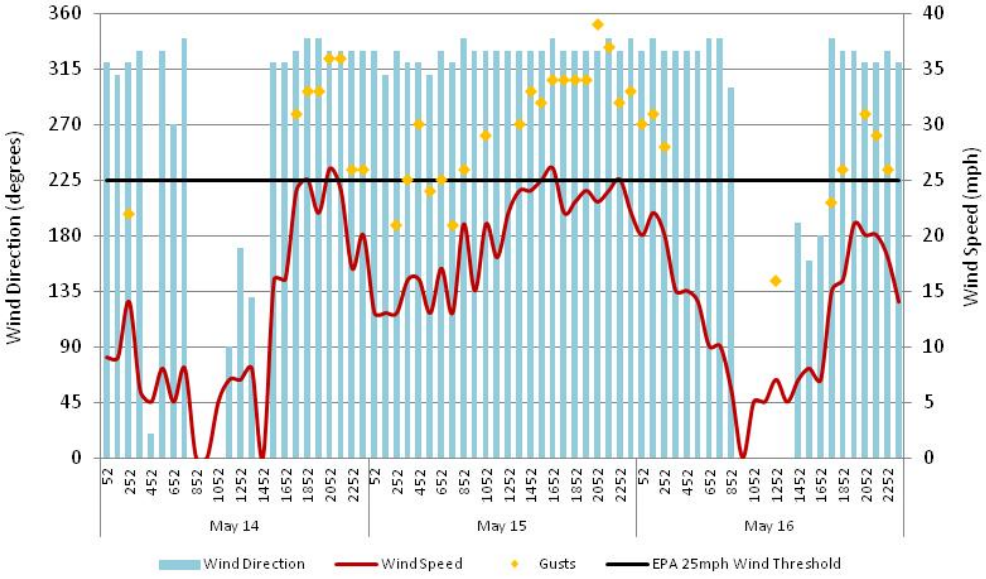


Fig. B-15: Wind at KTRM surpassed the 25 mph wind threshold. Wind data from the NCEI's QCLCD data bank.

FIGURE B-16
PALM SPRINGS INTERNATIONAL AIRPORT (KPSP)
WIND SPEED, GUSTS & DIRECTION

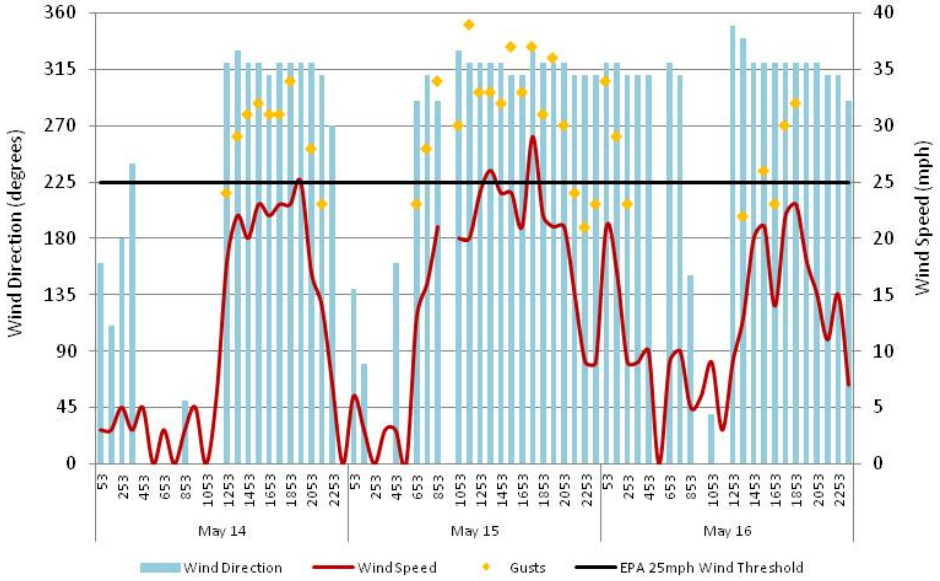


Fig. B-14: Wind at Palm Springs Airport came surpassed the 25 mph wind threshold while gusts did do so. Wind data from the NCEI's QCLCD data bank.

FIGURE B-17
TORRES-MARTINEZ TRIBAL
WIND SPEED & DIRECTION

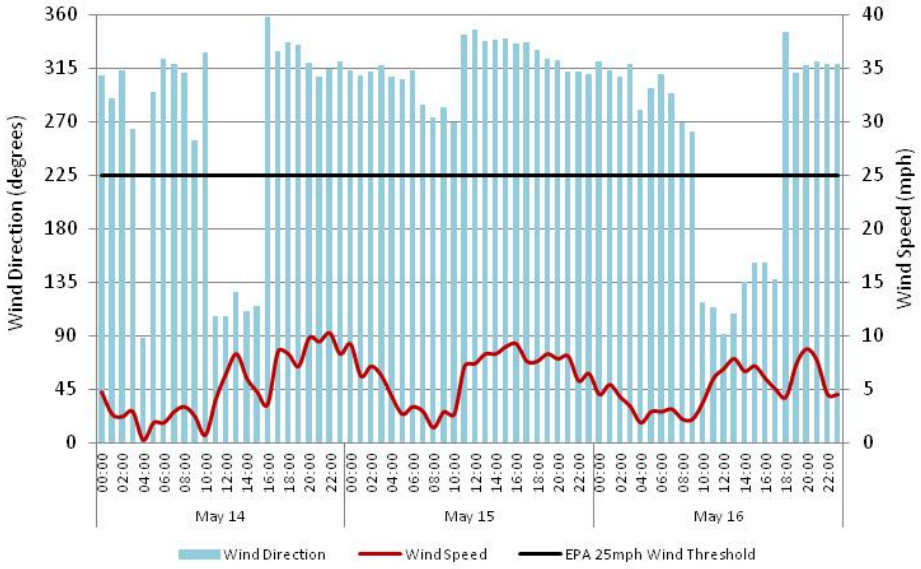


Fig. B-17: Winds at the Torres-Martinez Desert Cahuilla Indians Reservation did not surpass the 25 mph wind threshold. Wind data from AQMIS.

SOUTHEASTERN SAN DIEGO COUNTY

FIGURE B-18
CAMPO AIRFIELD (KCZZ)
WIND SPEED, GUSTS & DIRECTION

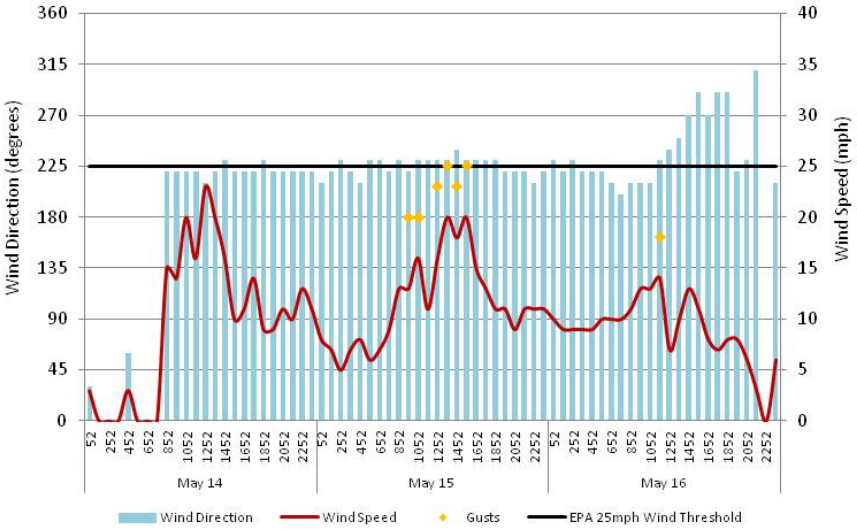


Fig. B-18: Wind gusts at KCZZ did not surpass the 25 mph wind threshold. Wind data from the NCEI's QCLCD data bank.

SOUTHWESTERN ARIZONA COUNTY

FIGURE B-19
YUMA, ARIZONA MCAS (KNYL)
WIND SPEED, GUSTS & DIRECTION

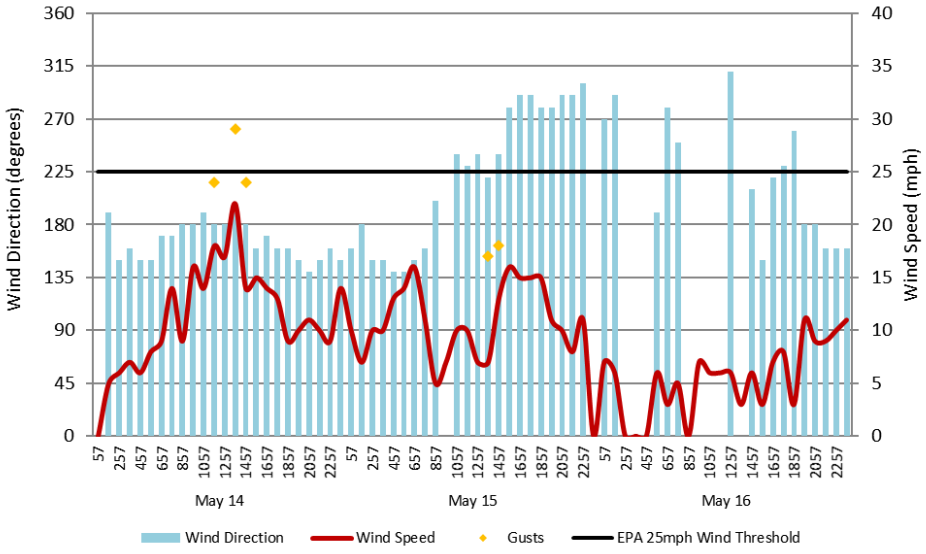


Fig. B-19: Winds and gusts at KNYL did not surpass the 25 mph wind threshold. Wind data from the NCEI's QCLCD data bank.

FIGURE B-20
MEXICALI, MEXICO INTERNATIONAL AIRPORT (MMML)
WIND SPEED & DIRECTION

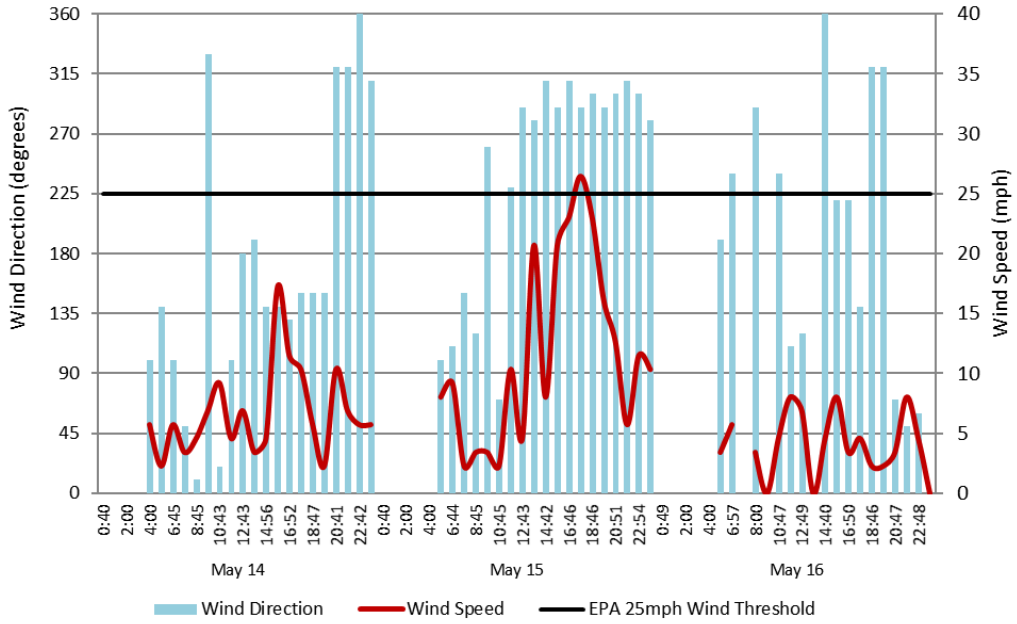


Fig. B-20: Winds at MMML surpassed the 25 mph wind threshold. Data from the University of Utah's MesoWest system.

UPSTREAM SITES

The following graphs provide evidence of the elevated wind speeds and confirm the prevailing wind direction at different sites upstream from Niland during the May 15, 2016 wind event.

FIGURE B-21
(FORMER) NAVAL TEST BASE
WIND SPEED & DIRECTION

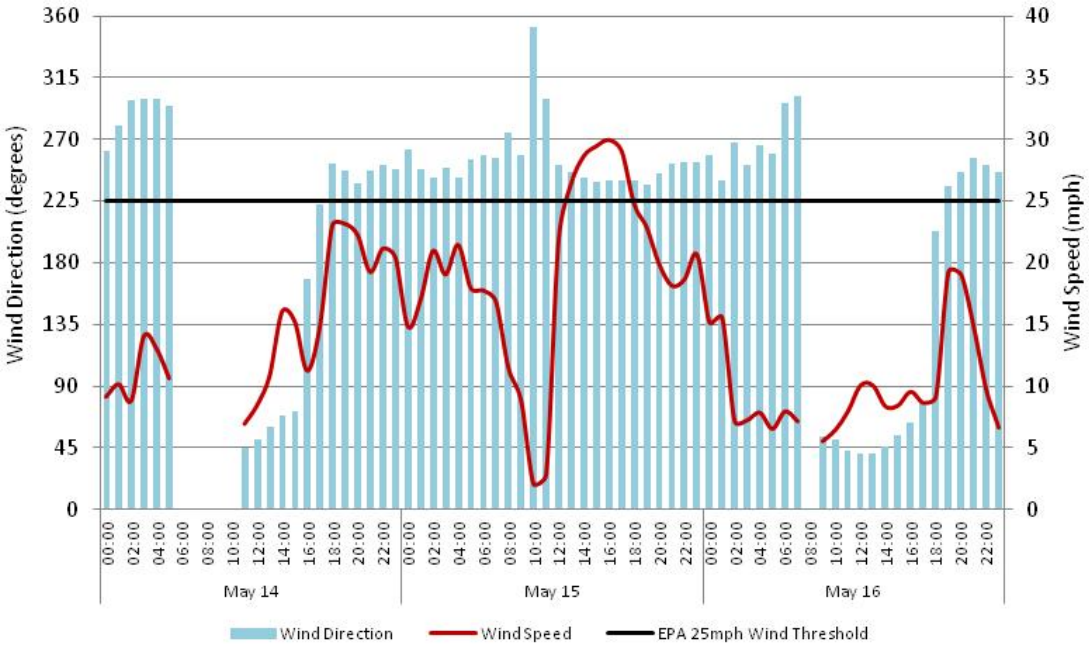
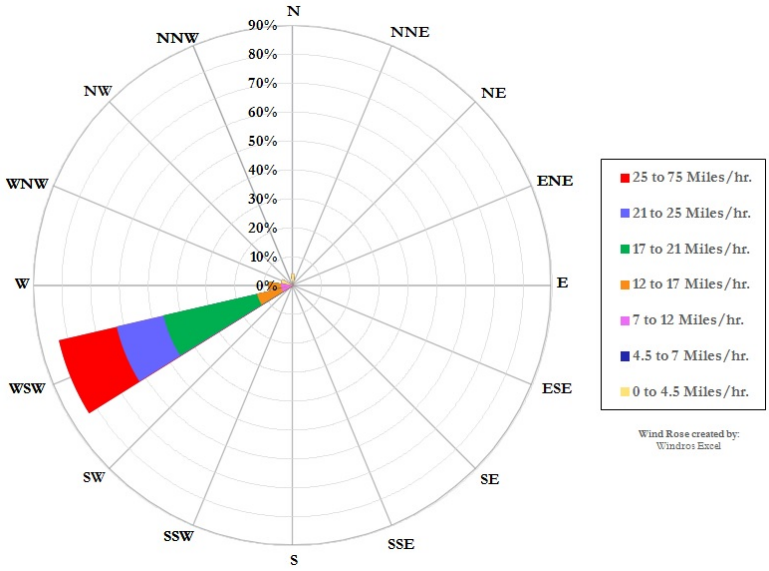
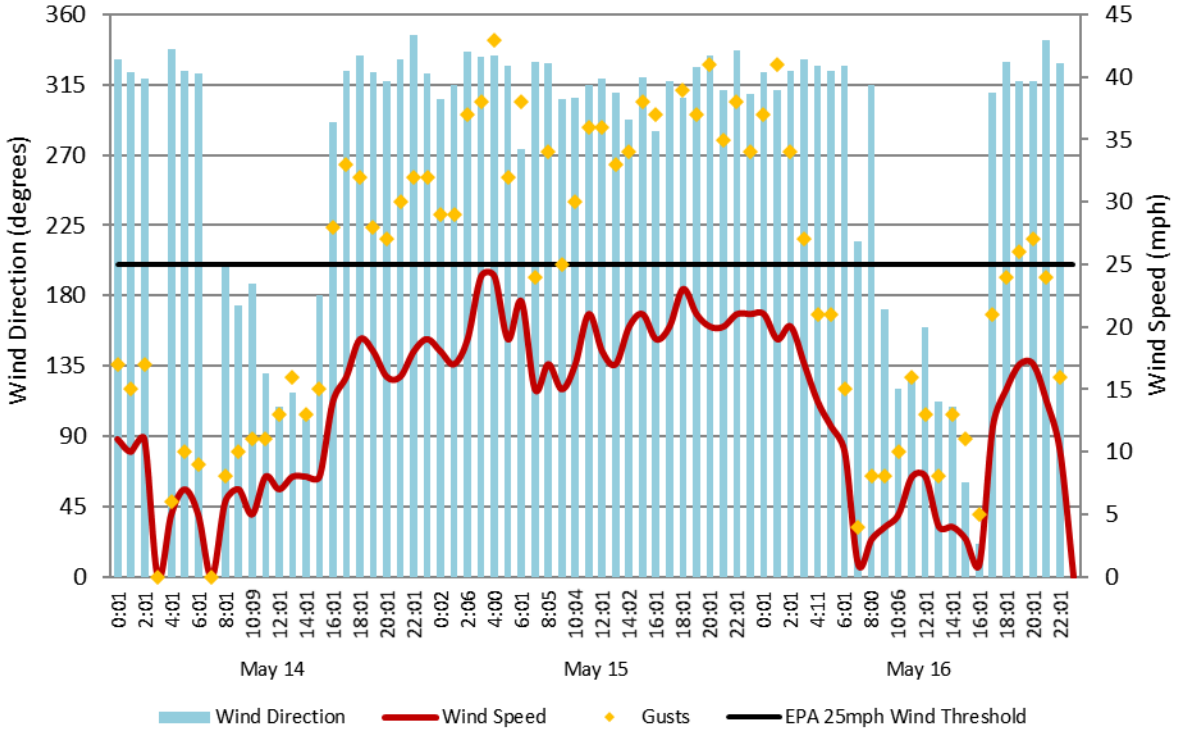


FIGURE B-22
(FORMER) NAVAL TEST BASE WIND ROSE – MAY 15, 2016

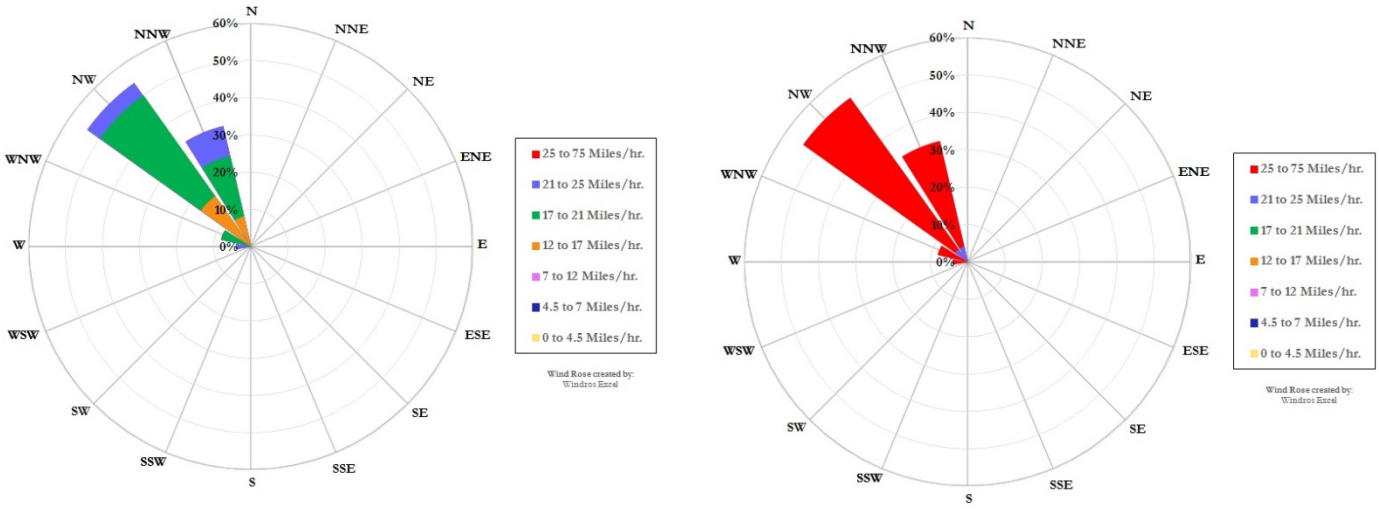


Figs. B-21 & B-22: Winds and gusts at the former Naval Test Base surpassed the 25 mph wind threshold. Wind data from AQMIS2.

FIGURE B-23
OCOTILLO WELLS
WIND SPEED, GUSTS & DIRECTION



FIGURES B-24 & B-25
OCOTILLO WELLS WIND ROSES – MAY 15, 2016



Figs. B-23, B-24 & B-25: Winds and gusts at Ocotillo Wells played an important role in transporting dust downstream to Niland. Winds are depicted in left wind rose. Gusts only are depicted in the right wind rose. Wind data from the University of Utah's MesoWest.

FIGURE B-26
FISH CREEK MOUNTAINS
WIND SPEED, GUSTS & DIRECTION

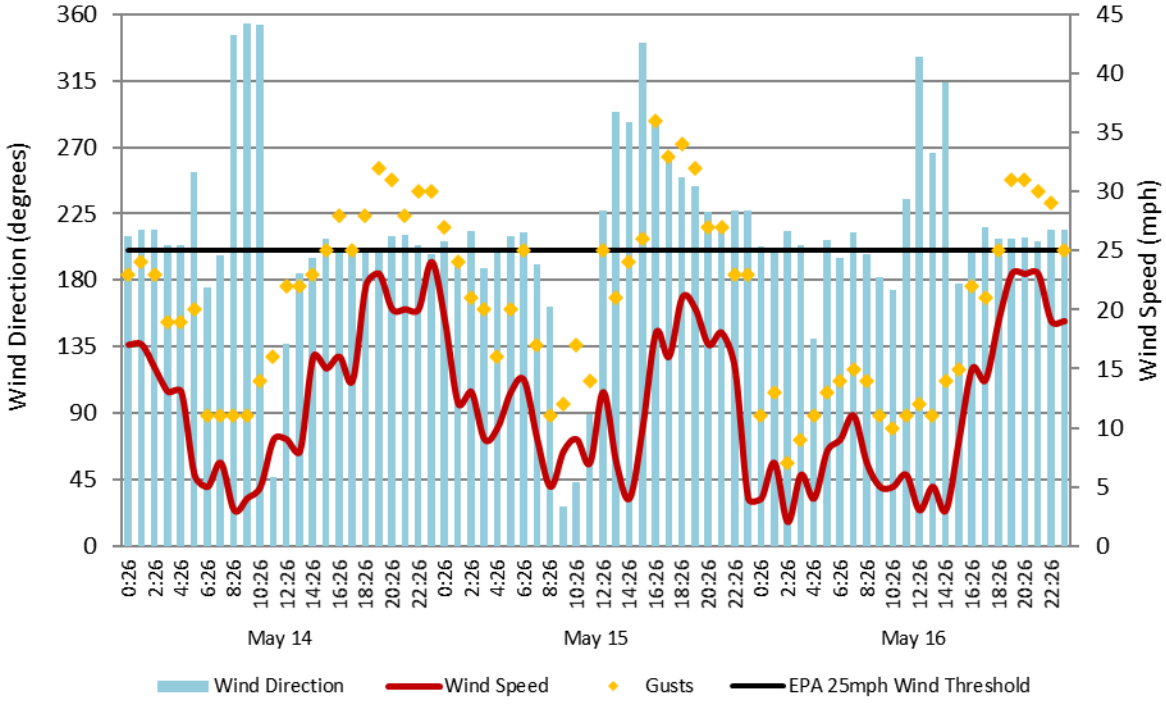
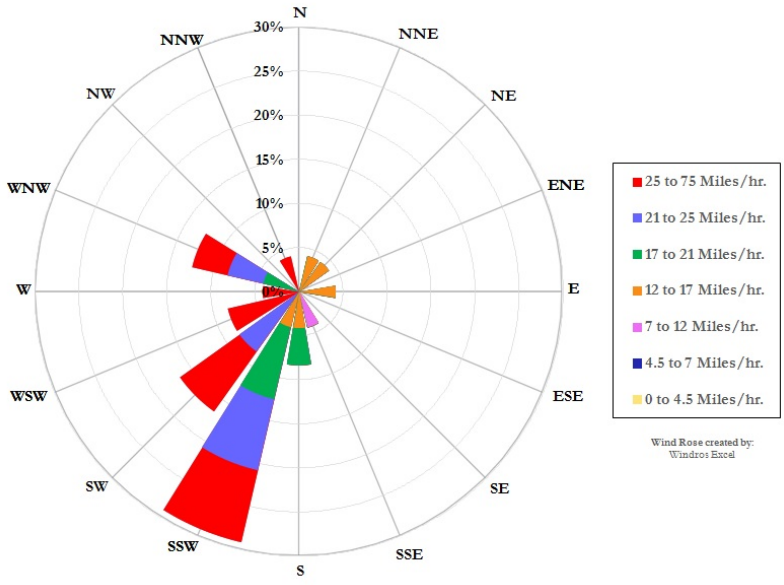


FIGURE B-27
FISH CREEK MOUNTAINS WIND ROSE (GUSTS ONLY) – MAY 15, 2016



Figs. B-26 & B-27: Wind gusts at the Fish Creek Mountains (MesoWest Station ID: FHCC1) surpassed the 25 mph wind threshold. The Fish Creek Mountains site is near the desert floor (elev. 781 ft).Wind data from the University of Utah's MesoWest.

FIGURE B-28
IMPERIAL COUNTY AIRPORT (KIPL) QCLCD DATA

U.S. Department of Commerce
National Oceanic & Atmospheric Administration
National Environmental Satellite, Data, and Information Service
Elev: -58 ft. Lat: 32.8342° N Lon: -115.5786° W
Station: **IMPERIAL CO AIRPORT, CA US WBAN:03144**

Local Climatological Data
Hourly Observations
May 2016
Generated on 06/06/2017

National Centers for Environmental Information
151 Patton Avenue
Asheville, North Carolina 28801

Date	Time (LST)	Station Type	Sky Conditions	Visibility	Weather Type (see documentation)	Dry Bulb Temp		Wet Bulb Temp		Dew Point Temp		Rel Hum %	Wind Speed (MPH)	Wind Dir (Deg)	Wind Gusts (MPH)	Station Press (inHg)	Press. Tend	Net 3-Hr Change (inHg)	Sea Level Press. (inHg)	Report Type	Precip Total (in)	Altimeter Setting (inHg)
					AU | AW | MW	(F)	(C)	(F)	(C)	(F)	(C)											
15	0053	7	CLR:00	10.00		69	20.6	60	15.5	47	8.3	45	11	260		29.75	8	+0.01	29.69	FM-15	0.00	29.69
15	0153	7	CLR:00	10.00		67	19.4	58	14.6	47	8.3	49	9	260		29.75			29.69	FM-15	0.00	29.69
15	0253	7	CLR:00	10.00		65	18.3	57	13.7	46	7.8	51	8	260		29.75			29.69	FM-15	0.00	29.69
15	0353	7	CLR:00	10.00		67	19.4	58	14.5	45	7.2	45	10	230		29.76	3	-0.01	29.70	FM-15	0.00	29.70
15	0453	7	CLR:00	10.00		68	20.0	59	15.0	47	8.3	47	3	260		29.78			29.72	FM-15	0.00	29.72
15	0553	7	CLR:00	10.00		71	21.7	61	16.3	45	7.2	39	5	200		29.79			29.73	FM-15	0.00	29.73
15	0653	7	CLR:00	10.00		73	22.8	63	17.4	50	10.0	44	3	190		29.81	3	-0.05	29.75	FM-15	0.00	29.75
15	0753	7	CLR:00	10.00		77	25.0	67	19.3	49	9.4	37	3	VRB		29.82			29.76	FM-15	0.00	29.76
15	0853	7	CLR:00	10.00		81	27.2	71	21.9	45	7.2	28	9	250		29.81			29.75	FM-15	0.00	29.75
15	0953	7	CLR:00	10.00		82	27.8	73	22.7	44	6.7	26	0	000		29.80	8	+0.01	29.75	FM-15	0.00	29.74
15	1053	7	CLR:00	10.00		86	30.0	78	25.7	43	6.1	22	6	260		29.79			29.73	FM-15	0.00	29.73
15	1153	7	CLR:00	10.00		90	32.2	83	28.5	44	6.7	20	16	260	22	29.77			29.71	FM-15	0.00	29.71
15	1253	7	CLR:00	10.00		91	32.8	84	28.7	46	7.8	21	18	260	26	29.76	8	+0.05	29.70	FM-15	0.00	29.70
15	1353	7	CLR:00	10.00		90	32.2	83	28.2	45	7.2	21	23	260	28	29.74			29.68	FM-15	0.00	29.68
15	1453	7	CLR:00	10.00		89	31.7	81	27.4	45	7.2	22	22	260	31	29.73			29.67	FM-15	0.00	29.67
15	1553	7	CLR:00	10.00		86	30.0	77	25.2	45	7.2	24	24	260	30	29.73	6	+0.03	29.67	FM-15	0.00	29.67
15	1653	7	CLR:00	10.00		83	28.3	73	23.0	46	7.8	27	21	260	31	29.72			29.66	FM-15	0.00	29.66
15	1753	7	CLR:00	9.00		79	26.1	69	20.5	47	8.3	32	24	260	38	29.73			29.67	FM-15	0.00	29.67
15	1853	7	CLR:00	6.00	HZ:7 |FU:05 |HZ:05	74	23.3	64	17.8	48	8.9	40	26	260	37	29.74	3	-0.01	29.67	FM-15	0.00	29.68
15	1953	7	CLR:00	10.00		72	22.2	62	16.8	47	8.3	41	21	270	28	29.77			29.70	FM-15	0.00	29.71
15	2053	7	CLR:00	10.00		72	22.2	62	16.8	46	7.8	40	20	270	29	29.78			29.72	FM-15	0.00	29.72
15	2153	7	CLR:00	10.00		71	21.7	61	16.3	45	7.2	39	17	270	25	29.78	1	-0.05	29.72	FM-15	0.00	29.72
15	2253	7	CLR:00	10.00		71	21.7	61	16.3	46	7.8	41	18	270	26	29.78			29.72	FM-15	0.00	29.72
15	2353	7	CLR:00	10.00		71	21.7	61	16.3	46	7.8	41	13	270	23	29.78			29.72	FM-15	0.00	29.72

FIGURE B-29
EL CENTRO NAF (KNJK) QCLCD DATA

U.S. Department of Commerce
National Oceanic & Atmospheric Administration
National Environmental Satellite, Data, and Information Service
Elev: -42 ft. Lat: 32.8167° N Lon: -115.6833° W
Station: **EL CENTRO NAF, CA US WBAN:23199**

Local Climatological Data
Hourly Observations
May 2016
Generated on 06/06/2017

National Centers for Environmental Information
151 Patton Avenue
Asheville, North Carolina 28801

Date	Time (LST)	Station Type	Sky Conditions	Visibility	Weather Type (see documentation)	Dry Bulb Temp		Wet Bulb Temp		Dew Point Temp		Rel Hum %	Wind Speed (MPH)	Wind Dir (Deg)	Wind Gusts (MPH)	Station Press (inHg)	Press. Tend	Net 3-Hr Change (inHg)	Sea Level Press. (inHg)	Report Type	Precip Total (in)	Altimeter Setting (inHg)
					AU | AW | MW	(F)	(C)	(F)	(C)	(F)	(C)											
15	0056	7	CLR:00	10.00									16	260		29.75	8	+0.01	29.76	FM-15	0.00	29.71
15	0156	7	CLR:00	10.00									15	250		29.75			29.76	FM-15	0.00	29.71
15	0256	7	CLR:00	10.00									11	250		29.75			29.76	FM-15	0.00	29.71
15	0356	7	CLR:00	10.00	-SN:03 |SN:71 |								21	250		29.76	3	-0.01	29.77	FM-15	T	29.72
15	0456	7	CLR:00	9.00	-SN:03 |SN:71 |								20	250		29.77			29.78	FM-15	T	29.73
15	0556	7	CLR:00	10.00									9	210		29.80			29.81	FM-15	T	29.76
15	0656	7	CLR:00	10.00									8	250		29.81	2	-0.05	29.82	FM-15	0.00	29.77
15	0756	7	CLR:00	10.00									16	270		29.81			29.82	FM-15	0.00	29.77
15	0856	7	CLR:00	10.00									3	300		29.81			29.82	FM-15	0.00	29.77
15	1056	7	CLR:00	10.00									17	250		29.79			29.80	FM-15	0.00	29.75
15	1156	7	CLR:00	9.00	-SN:03 |SN:71 |								24	240	30	29.77			29.78	FM-15	T	29.73
15	1256	7	CLR:00	9.00	-SN:03 |SN:71 |								25	250	32	29.77			29.78	FM-15	T	29.73
15	1356	7	CLR:00	9.00	-SN:03 |SN:71 |								26	250	32	29.75			29.76	FM-15	T	29.71
15	1456	7	CLR:00	9.00	-SN:03 |SN:71 |								30	260	36	29.74			29.75	FM-15	T	29.70
15	1556	7	CLR:00	9.00	-SN:03 |SN:71 |								32	260		29.74	6	+0.03	29.75	FM-15	T	29.70
15	1656	7	CLR:00	9.00	-SN:03 |SN:71 |								30	250	36	29.74			29.75	FM-15	T	29.70
15	1756	7	CLR:00	10.00	-RA:02 |RA:61 |	80	26.7	70	21.3	45	7.2	29	23	250	31	29.74			29.75	FM-15	T	29.70
15	1856	7	CLR:00	4.00	-SN:03 |SN:71 |								32	260	38	29.76	3	-0.02	29.77	FM-15	T	29.72
15	1956	7	CLR:00	9.00	-SN:03 |SN:71 |								29	270	36	29.78			29.79	FM-15	T	29.74
15	2056	7	CLR:00	9.00	-SN:03 |SN:71 |								26	260	32	29.79			29.80	FM-15	T	29.75
15	2156	7	CLR:00	9.00									20	260		29.79	1	-0.03	29.80	FM-15	T	29.75
15	2256	7	CLR:00	9.00	-SN:03 |SN:71 |								23	260		29.79			29.80	FM-15	T	29.75
15	2356	7	CLR:00	9.00	-SN:03 |SN:71 |								24	250		29.78			29.79	FM-15	T	29.74